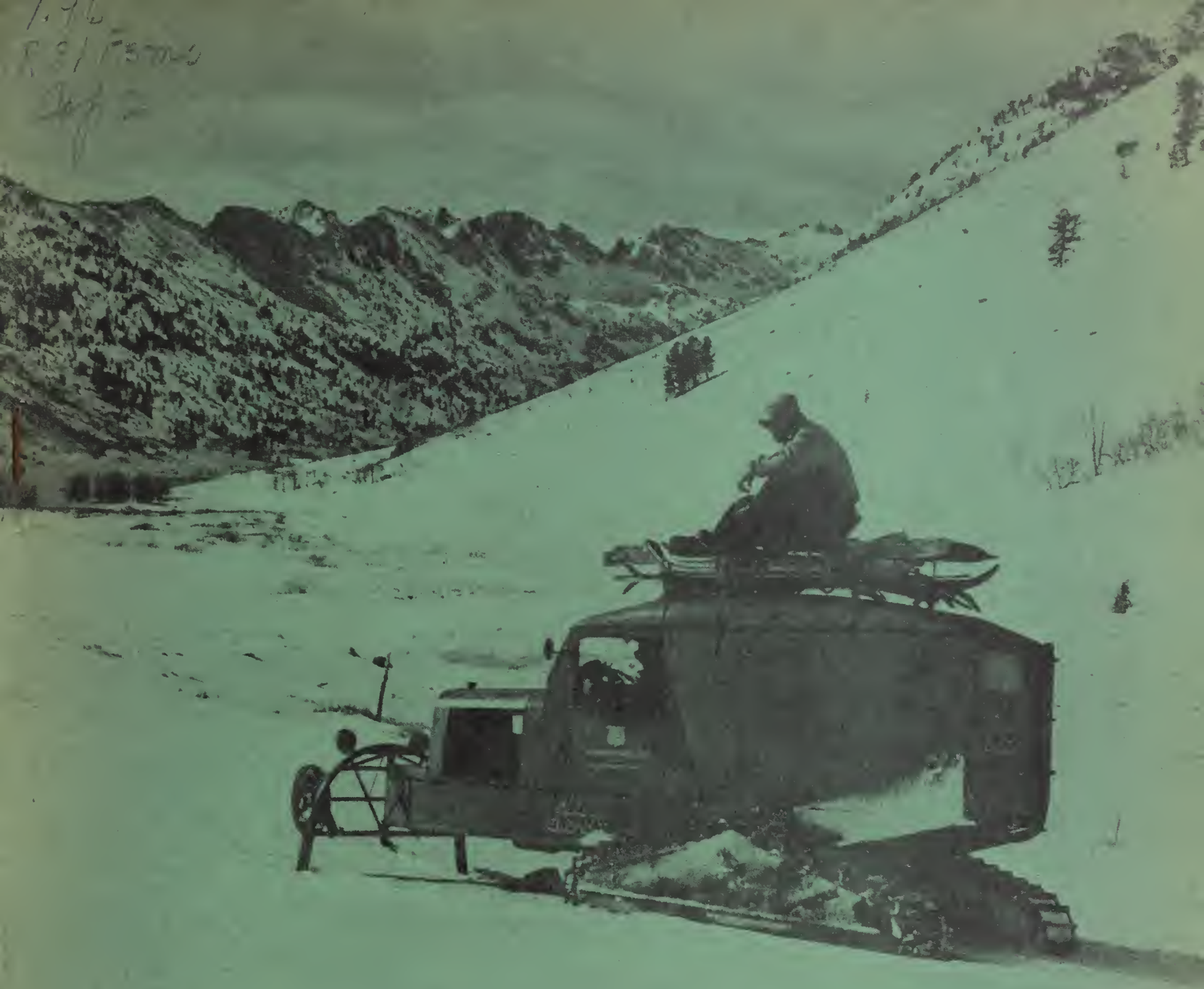

FEDERAL-STATE COOPERATIVE

SNOW SURVEYS AND IRRIGATION WATER FORECASTS

for

Montana and Yellowstone River Tributaries in Wyoming

By
Division of Irrigation, Soil Conservation Service
United States Department of Agriculture
and
Montana Agricultural Experiment Station

In cooperation with the U. S. Forest Service, U. S. Geological Survey, National Park Service, U. S. Bureau of Reclamation, State Engineers of Montana and Wyoming and other Federal, State and local organizations.

As of

MAY 1, 1950

FEDERAL-STATE COOPERATIVE
SNOW SURVEY AND IRRIGATION WATER FORECASTS

FOR

MONTANA and NORTHERN WYOMING

Upper Missouri and Upper Columbia River
Basins

Report Prepared
by

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OUTLOOK FOR IRRIGATION WATER SUPPLY
FROM SNOW SURVEY

MAY 1, 1950

On the Upper Missouri Basin, the irrigation water supply on May 1 is better potentially than on April 1. The snow water content has decreased on some courses and has risen on others. The usual trend from April to May is a sharp decrease in water content.

All readings are above average and most of them are record-high readings for as far back as 1934. A good many of the readings are fantastically high when comparing them with the average of 14 or 16 years and it is not likely that the stream flow will actually reflect this exceptional abnormal high proportion. As often happens with the abnormal years, nature softens the rigorous effects and the resultant yearly runoff is large but not proportionally as large as indicated. However, the anticipation is for an excellent irrigation water supply from most tributaries of the Upper Missouri River.

The Jefferson River is perhaps the most critical of the three tributaries to the Missouri at Toston. April measurements on the Beaverhead were slightly below average and precipitation up to the first of May was below normal. However, an early May storm brought considerable moisture to this basin for ground water storage, but irrigation supplies are liable to be below the last two years for summer use.

The Madison and Gallatin River basins have an excellent supply of water, except for the usual late deficiency on the Gallatin.

The Marias and Teton River basins have maintained their excellent water supply during the month of April. Although no direct measurements were made on the Milk River, the five courses on the adjacent St. Mary River were measured and show an abnormally high water content for May 1. These measurements are higher than any water content measurements during the past 28 years of record, averaging about 197% of the 28 year average.

The Upper Yellowstone River has an ample supply of water from the Park area.

The Lower Yellowstone River basin, comprising the Wind River, Popo Agie, Big Horn and Shoshone Rivers, all in northern Wyoming, have an excellent water supply as of May 1. Snow water content measurements have not decreased materially since April 1. Although the ground is NOT frozen under the snow pack it is expected that a good portion of the above-average snow pack will go to ground storage even though this thawing has taken place during May instead of during April. The Tongue River still shows its deficiency as indicated in April although the Powder River has recovered to some extent and now indicates about average conditions.

COLUMBIA RIVER BASIN

The Upper Columbia River Basin is in condition for an EXCELLENT water supply for this coming irrigation season.

During the month of May, snow water content has increased to such an extent that far above normal conditions exist over the basin and it is anticipated that extremely high stream flows, some of record proportions, are in immediate prospect as soon as the snow begins to melt.

All snow measurements are far above 1943, and 1948 and 1949 are all high years. The Kootenai and Flathead River measurements are particularly high; the greatest in 14 years of record. It is anticipated that the April-July flow at Columbia Falls will be over 7.2 million acre-feet and that 9.2 million acre-feet will pass that point between April and the last of September. The 10-year averages for this station are 3.7 and 4.6 million acre-feet respectively, for the same periods. At Heron, Montana, near the Idaho state boundary, it is anticipated that the Lower Clarks Fork River will flow 14.2 million acre-feet between April and June, and 17.6 million acre-feet between April and September. These are large figures, but the exceptionally heavy snow pack warrants their sizes.

PRELIMINARY ESTIMATES OF RUNOFF AT A NUMBER OF
REPRESENTATIVE GAGIN STATIONS IN MONTANA
Soil Conservation Service - Division of Irrigation

NAME OF STREAM	May-June	July-Aug-Sept.	May-Sept.
MISSOURI BASIN:		July-Aug.	May-Aug.
Gallatin River at Gateway	337,000	194,000	531,000
Madison River at West Yellowstone	110,600	81,580	192,180
Hyalite Creek at Ranger Station	19,800	11,000	30,800
North Fork Musselshell at Delpine	3,570	1,780	5,350
Yellowstone River at Corwin Springs	992,600	628,000	1,620,600
Clarks Fork River at Chance	49,200	-------	-------
		May-July	
Red Lodge River above Cooney Reservoir	14,590	7,930	
Missouri River at Fort Benton	2,716,700	-------	
LOWER YELLOWSTONE:			
	Apr.-June	Apr.-Sept.	
Popo Agie River at Riverton		550,000	
Wind River at Riverton		750,000	
Shoshone River below Shoshone Dam		1,000,000	
COLUMBIA RIVER BASIN:			
Bitterroot River at Darby	515,000	635,000	
Clark Fork above Missoula	2,510,000	2,200,000	
Clark Fork below Missoula	3,820,000	3,950,000	
Clark Fork at St. Regis	5,050,000	5,250,000	
Flathead River at Columbia Falls	7,178,000	9,205,000	
Flathead River at Polson	7,900,000	10,000,000	
Clark Fork River at Plains	12,500,000	15,700,000	
Clark Fork River at Heron	14,250,000	17,650,000	

Note: All estimated volumes subject to a discrepancy of plus or minus 10 to 15%.

SUPPLEMENTAL INDEX LISTS OF SNOW SURVEY COURSES IN ADJACENT BASINS, USED IN THIS REPORT AND SHOWN ON THE INDEX MAP

DRAINAGE AND SNOW COURSE MISSOURI	Adj. State No.	Mont. No.	Elev. Feet	Section Lat.	Twp.	Range Long.	Record Began	Measurement Dates	Measured By
JEFFERSON	Idaho								
Kilgore	10	11E12	6200	6	12N	39E	1937	1,2,3,4,5	pd. obs.
Blue Ridge Mine	5	11E11	6700	27	13N	38E	1938	4	pd. obs.
Camp Creek	6	12E3	6800	21	13N	36E	1936	1,2,3,4	1
Moose Creek	8	13D16	6200	22-27	27N	21E	1937	3,4,5	1
Big Springs	3	11E9	6500	34	19N	44E	1936	1,2,3,4,5	10
Island Park	9	11E10	3600	28	13N	43E	1936	1,2,3,4,5	10
Valley View	17	11E8	6500	7	15N	44E	1936	1,2,3,4	10
UPPER YELLOWSTONE	Wyo.								
Lewis Lake Div.	9	10E9	7900	44-13		110-40	1919	1,2,3,4	10
Aster Creek	2	10E8	7700	44-17		110-37	1919	1,2,3,4	10
Tom Thumb Summit		10E7	7900	44-22		110-35	1949	3,4	10
LOWER YELLOWSTONE (Wind River)	Wyo.								
Togwotee Pass	12	10F1	9600	29	44N	110W	1936	2,3,4,5	10
Kendall	25	9F12	7900	23	38N	110W	1936	3,4,5	1
Loomis Park	26	10F4	8500	14	37N	111W	1942	3,4,5	1
Yellows Jacket	14	10F5	6775	33	42N	112W	1936	3,4,5	1
Black Rock	2	10F3	8600	4	44N	111W	1936	2, 4	10
Dutch Joe	23	9G6	8700	32	31N	104W	1936	4,5	1
Mulligan Park	24	9G5	8900	17	35N	108W	1936	3,4,5	1
KOOTENAI	Idaho				COLUMBIA				
Smith Creek	13	16A1	4800	29	64N	3W	1937	4,5	1
	Canada								
Fernie	10		3500	49-31		115-01	1939		
Gray Creek	34		5100	39-37		116-41	1948		
Marble Canyon	32		5000	51-12		116-09	1947		
Nelson Creek	19		3050	44-25		117-14	1938		
Sinclair Pass	8A		4500	50-40		115-58	1947		
Sullivan Mine	20A		5100	49-43		116-01	1945		
Upper Elk River	41		4400	50-01		114-56	1947		
Kimberley	20		3800	49-41		115-59	1945		
UPPER CLARK FORK	Idaho								
49 Meadows	1	15B10	5000	6	43N	5E	1937	1,2,3,4,5	1
Lookout	10	15B2	5250	4	47N	6E	1921	1,2,3,4,5	1
Above Roland	2	15B7	4350	35	47N	6E	1926	3	12*
Below Roland	3	15B6	3770	34	47N	6E	1926	3	12*
Sunset	16	15B9	5600	28	49N	5E	1921	3	12*
PEND OREILLE	Idaho								
Mosquito Ridge	9	16A4	5110	5	54N	2E	1937	4,5	1
BITTERROOT	Idaho								
Moose Creek	8	13D16	6200	22-27	27N	21N	1937	3,4,5	1
Kit Carson	3	14D3	4700	4	27N	16E	1937	4	1
Savage Pass	7	14C4	6000	18	36N	15E	1937	4	1
Powell Pasture	6	15C3	3700	27	27N	14E	1937	4	1
Packers Mdw.	5	14C2	5700	15	38N	15E	1937	2,3,4,5	1

*Washington Water Power Company

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SOIL CONSERVATION SERVICE
H. H. Bennett, Chief

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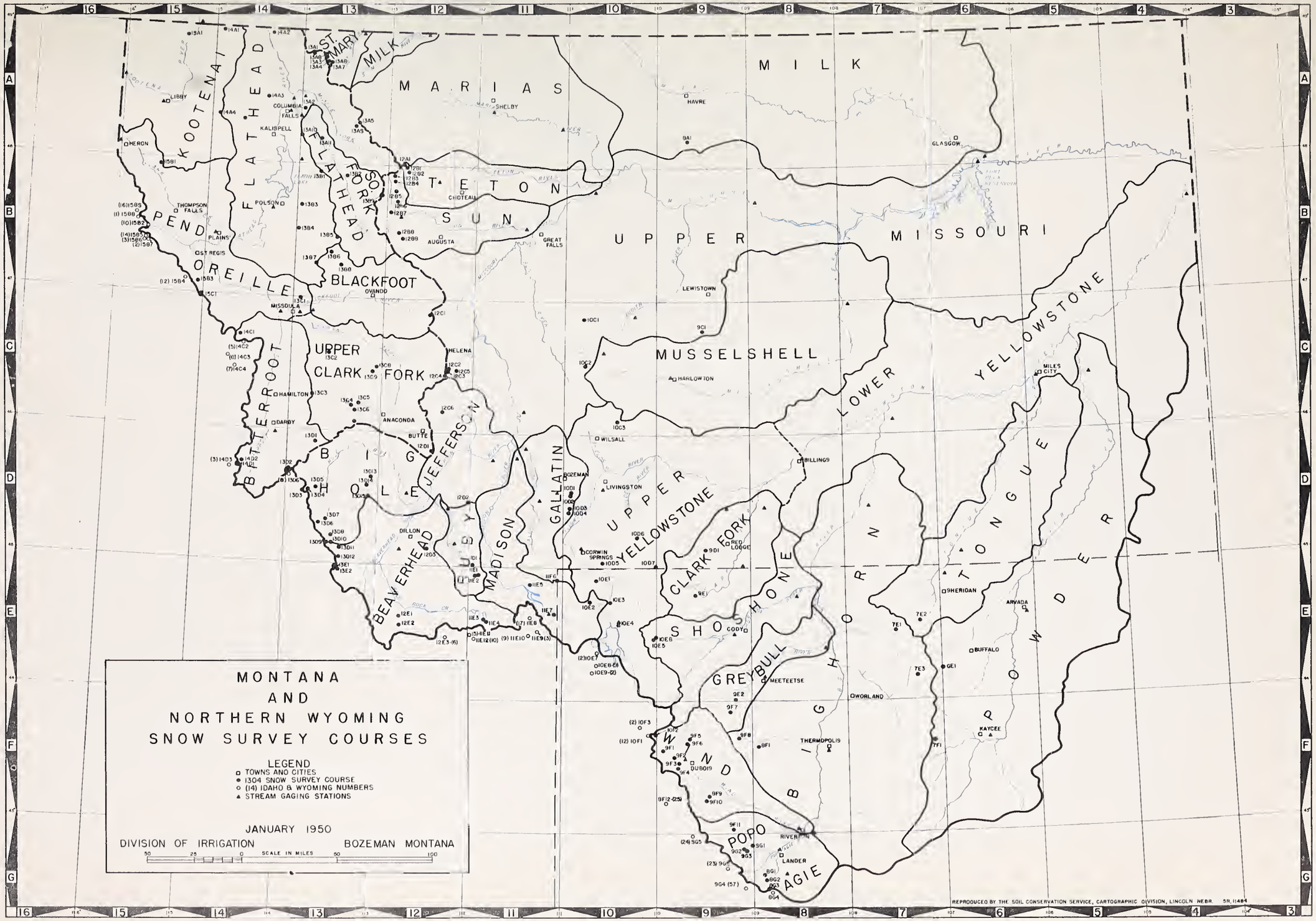

INDEX TO MONTANA SNOW-WATER CONTENT SNOW COURSES

Drainage Basin and Course Name	Montana Number	Elev.	Location Sec. Lat.	Twp.	Range Long.	Record Began	Measuring Dates[a]	Measured By:[b]
Missouri River Drainage								
JEFFERSON RIVER (ROCK-BEAVERHEAD)								
Lakeview Ridge	11E3	7L00	27	11S	2W	19L8	3,,,5	9
Lakeview Canyon	11EL	6930	2o	1LS	2W	194-	3,L,5	9
Limekiln	11E2	6950	15	5S	9W	19L8	3,L	1
White Pine Ridge	11E1	8650	16	11S	9W	19L8	3,L	1
(ROSE PRAIRIE)								
Bloody Dick	13D1o	7000	12	8S	1oW	19L8	3,L	1
Gold Stone	13D9	8100	11	8S	1oW	19L8	3,L	1
Lemhi Pass	13E1	7L00	9	10S	15W	19L8	3,L	1
Merrell Creek	13D12	6650	14	9S	15W	19L8	3,L	1
Trail Creek	13E2	7090	15	10S	15W	19L5	3,L	1
Selway Junction	13D11	6600	27	6S	15W	19L8	3,L	1
(BIG HOLE)								
Big Hole Pass	13D3	7LL0	28	3S	18W	19L8	3,L	1
Big Hole Pass(Below)	13DL	6900	2L	3S	18W	19L8	3,L	1
East Boundary	13D5	6700	22	3S	17W	19L8	3,L	1
Gibbons Pass	13D2	7100	L	2S	19W	1934	2,3,L,5	1,2
Jahnke Creek	13D8	73L0	25	7S	1oW	19L8	3,L	1
Miner Forks	13D6	7300	2L	6S	17W	19L8	3,L	1
Miner Lake	13D7	6720	10	6S	16W	1945	3,L,5	1
(WISE RIVER)								
Anderson Mdw.	13D14	7000	18	3S	12W	19L8	3,L	1
Elk Horn	13D15	8L50	15	LS	12W	1934	3,L,5	2
Wise River	13D13	6300	15	2S	12W	19L8	3,L	1
(RUBY RIVER)								
Cottonwood	11E2	5900	2L	10S	3W	19L8	3,L	1
Cottonwood (Upper)	11E1	8L00	30	10S	2W	19L8	3,L	1
Flashlight	12D3	6950	22	8S	7W	1945	3,L,5	1
Tobacco Root	12D2	6900	13	LS	3W	19L8	3,L	1
Vigilante	11D1	6125	28	9S	3W	19L8	3,L	1
MADISON RIVER								
Hebgen	11E5	6550	22	11S	3E	1934	1,2,3,L,5	2
West Yellowstone	11E7	6700	34	13S	5E	1934	1,2,3,L,5	2
Norris Basin	10E2	7500	LL°-LL'		110°-L2'	1935	3,L	5,o
GALLATIN RIVER								
Devil's Slide	10DL	8100	1L	5S	6E	1935	3,L,5	2,6
Hood Meadow	10D3	6600	22	LS	6E	1934	3,L,5	2,o
Mystic Lake	10D2	6600	30	3S	7E	1935	2,3,L	6,7
New World	10D1	6700	2L	3S	6E	1939	2,3,L,5	6,7
21-Mile	11E6	7150	1	11S	5E	1934	1,2,3,L,5	2
MISSOURI RIVER MAIN STEM								
Chessman Reservoir	12C5	6200	2	8N	5W	1936	1,2,3,L,5	2
Crystal Lake	9C1	6100	2L	12N	17E	1941	3,L	1
Grasshopper	10C2	7000	19	9N	8E	1938	3,L	1
Kings Hill	10C1	7950	35	13N	7E	1937	3,L,5	2
Picnic Grounds	12C6	6500	22	5N	6W	1940	2,3,L	3
Pipestone Pass	12D1	7200	11	1N	7W	1938	2,3,L,5	1
Stemple Pass	12C1	6900	1o	13N	7W	1934	3,L,5	2
Tenmile Creek,Lower	12C2	6250	13	8N	6W	1935	1,2,3,L,5	2
Tenmile Creek,Middle	12C3	6800	13	8N	6W	1934	1,2,3,L,5	2
Tenmile Creek,Upper	12CL	8000	19	8N	5W	1935	1,2,3,L,5	2
(TETON RIVER)								
Fright Creek	12A1	6000	13	26N	10W	19L8	3,L	1
Waldron Creek	12B2	5000	1o	25N	9W	19L8	3,L	1
West Fork	12B1	6000	6	25N	9W	19L8	3,L	1
(SUN RIVER)								
Bench Mark	12B8	5500	9	20N	10W	19L8	3,L	1
Cabin Creek	12Bo	5L00	33	23N	10W	1949	3,L	1
5-Bull	12B9	5600	3o	20N	10W	19L8	3,L	1
Gates Park	12B5	5300	31	21N	10W	1949	3,L	1
Goat Mountain	12B7	7000	20	22N	10W	1934	3,L	2
My Lake	13B9	7300	21	23N	12W	1950	3,L	1
Wrong Creek Ridge	12B3	6800	17	25N	10W	1949	3,L	1
Wrong Creek	12BL	5700	32	25N	10W	1949	3,L	1
(MARIAS RIVER)								
Marias Pass	13A5	5250	3L	30N	1LW	1936	1,2,3,L,5	2
Snow Lab. #1o	13A9	5200	15	29N	1LW	1947	1,2,3,L,5	2
(MILK RIVER)								
Rocky Boy	9A1	5200	15	28N	1oE	1941	3,L	7
(MUSSELSHELL RIVER)								
Grasshopper	10C3	7000	19	9N	8E	1938	3,L	1
UPPER YELLOWSTONE								
Camp Senia	9D1	7890	2	8S	18E	1937	L	1
Canyon	10E3	7750	LL°-LL'		110°-30'	1938	1,2,3,L,5	Pd.Obs.
Cooke City	10D7	7L00	25	9S	1LE	1937	1,2,3,L,5	5
Crevice Mt.	10D5	8L00	29	9S	9E	1935	3,L	1
Independence	10Do	8000	22	7S	12E	1941	3,L	Pd.Obs.
Lake Camp	10EL	7850	LL°-3L'		110°-2L'	1937	1,2,3,L,5	Pd.Obs.
Lodgepole (Wyo.)	9E1	8200	32	56N	106W	1940	L,5	1
Lupine Creek	10E1	7300	LL°-5L'		110°-37'	1938	1,2,3,L,5	5
(SHIELDS RIVER)								
Porcupine	10C3	6500	10	LN	10E	1938	3,L	1
LOWER YELLOWSTONE (WIND RIVER) WYO.								
Brooks Lake #3	10F2	9200	23	LLN	110W	1939	2,3,L,5	Pd.Obs.
Burroughs Creek	9F6	8800	15	L3N	107W	19L8	2,3,L,5	Pd.Obs.
Dinwoodie	9F10	10000	9	38N	105W	19L8	2,3,L,5	Pd.Obs.
Dry Creek	9F9	9500	3L	LN	105W	19L8	2,3,L,5	Pd.Obs.
DuNoir	9F2	8750	27	L2N	108W	19L0	2,3,L,5	Pd.Obs.
Geyser Creek	9F3	8500	12	L1N	108W	19L8	2,3,L,5	Pd.Obs.
Hobbs Park	9G2	10000	22	2S	3W	19L8	2,3,L,5	Pd.Obs.
Little Warm	9FL	9500	2L	L1N	108W	19L8	2,3,L,5	Pd.Obs.
Mosquito Park R.S.	9G3	9500	23	2S	3W	19L0	2,3,L,5	Pd.Obs.
Sheridan R. S.	9F1	7500	3	L2N	109W	1939	2,3,L,5	1
St.Lawrence R.S.	9F11	9000	26	1N	LW	19L0	2,3,L,5	Pd.Obs.
T-Cross Ranch	9F5	8000	1	L3N	107W	19L0	2,3,L,5	Pd.Obs.
Trout Creek	9G1	8L00	5	2S	2W	19L8	2,3,L,5	Pd.Obs.
Togwotee Pass	10F1	9600	29	LLN	110W	1936	2,3,L,5	10
(FOFO AGIE RIVER) WYO.								
Blue Ridge	8G2	9500	23	31N	101W	1939	2,3,L,5	1
Grannier Meadows	8GL	9000	19	30N	100W	1936	2,3,L,5	1
Larson Creek	9GL	9000	12	30N	103W	19L8	3,L,5	1
Sawmill Glade	8G1	8500	3	31N	101W	1939	2,3,L,5	1
South Pass	8G3	9000	13	30N	101W	1939	2,3,L,5	1

Drainage Basin and Course Name	Montana Number	Elev.	Location Sec. Lat.	Twp.	Range Long.	Record Began	Measuring Dates[a]	Measured By:[b]
Missouri River Drainage (Cont.)								
BIG HORN RIVER WYO.								
Beavers Hill	9F5	6900	6	L3N	102W	19L8	2,3,L,5	Pd.Obs.
Owl Creek	8F1	8700	3o	L3N	101W	19L8	2,3,L,5	Pd.Obs.
Tensleep R.S.	7E3	8300	30	L9N	86W	1935	L,5	1
Timber Creek	9E2	8600	25	L7N	103W	19L8	L,5	1
Ranger Creek	7E1	8600	32	53N	88W	1935	L,5	1
Wood River	9F7	8000	28	L6N	103W	1939	2,3,L,5	1
(SHOSHONE RIVER) WYO.								
East Entrance	10Eo	7000	17	52N	109W	19L8	1,2,3,L,5	5
Sylvan Pass	10E5	7100	12	52N	110W	1936	1,2,3,L,5	5
TONGUE RIVER WYO.								
Big Goose	7E2	7700	L	53N	86W	1935	L,5	1
POWDER RIVER WYO.								
Red Fork	7E1	7000	18	L3N	85W	1936	L,5	Pd.Obs.
Sour Dough	6E1	8500	17	L9N	81W	1936	L,5	1
Columbia River Basin								
KOOTENAI RIVER								
Baree Mountain	15B1	6000	1	25N	31W	1937	L,5	1
Blue Bird Basin	1LA1	6800	2L	37N	26W	1937	L,5	1
Brush Creek	1LAL	5000	13	30N	18W	1941	3,L	1
Red Mountain	15A1	6000	L	36N	29W	1937	3,L,5	1
FLATHEAD RIVER								
Big Creek	13B3	6750	6&7	22N	18W	1941	L,5	L
Brush Creek	1LAL	5000	13	30N	26W	1937	3,L	1
Cattle Queen	13A1	6700	7	35N	17W	1939	3,L	5
Desert Mountain	13A2	5600	2L	31N	19W	1937	1,2,3,L,5	1
Elk Mountain	13BL	6750	1	20N	19W	1941	3,L	L
Goat Mountain	12B7	7000	20	22N	10W	1934	3,L	2
Hell Roaring Divide	1LA3	5770	35	32N	22W	1942	L,5	1
Kishenehn	1LA2	6300	7	37N	21W	1946	L,5	5
Limestone Pass	13B8	7000	3L	17N	15W	1948	3,L	1
Logan Creek	1LA5	6300	3L	30N	2LW	1937	3,L	1
Marias Pass	13A5	5250	3L	30N	1LW	1934	1,2,3,L,5	2
North Fork Jocko	13B7	6330	3	17N	17W	1941	3,L	L
Rainy Lake	13B6	6300	11	18N	16W	1947	3,L,5	1
Snow Lab. # 16	13A9	5200	15	29N	1LW	1946	1,2,3,L,5	2
Spotted Bear Mt.	13B2	7000	23	25N	15W	1948	3,L	1
Strawberry Lake	13B10	6500	11	28N	19W	1948	3,L	1
Trinkus Lake	13B1	6500	9	25N	17W	1948	3,L	1
Trout Lake	13B11	3600	21	28N	17W	1948	3,L	1
Upper Holland Lake	13B5	7000	28	20N	16W	1948	3,L	1
UPPER CLARK FORK								
Chessman Reservoir	12C5	6200	2	8N	5W	1936	1,2,3,L,5	2
East Fork Ranger Stn	13D1	5L00	16	2N	17W	1937	L	1
El Dorado Mine	13C9	7800	23	8N	12W	1946	L	11
Gold Creek Lake	13C8	7200	1L	8N	12W	1946	L	11
Intergaard	13CL	6L50	6	5N	13W	1939	2,3,L	3
North Fork Jocko	13B7	6330	3	17N	17W	1941	3,L	L
Picnic Grounds	12C6	6500	22	5N	6W	1940	2,3,L	3
Pipestone Pass	12D1	7200	11	1N	7W	1938	2,3,L,5	1
Rainy Lake	13B6	6300	11	18N	16W	1947	3,L,5	1
Skalkaho Summit	13C3	7258	30	6N	17W	1937	L	1
Slide Rock Mountain	13C2	7100	26	10N	16W	1937	L	1
Southern Cross	13C5	6500	9	5N	13W	1939	2,3,L	3
Stemple Pass	13C1	6900	16	13N	7W	1934	3,L,5	2
Storm Lake No. 2	12C7	7780	19	LN	13W	1939	L	1
Stuart Mill	13C6	6500	19	5N	13W	1939	2,3,L	3
Stuart Mountain #1	13C1	7L00	6	1LN	18W	1936	L	1
Tenmile Creek,Lower	12C2	6250	13	8N	6W	1935	1,2,3,L,5	2
Tenmile Creek,Middle	12C3	6800	13	8N	6W	1935	1,2,3,L,5	2
Tenmile Creek,Upper	12CL	8000	19	8N	5W	1935	1,2,3,L,5	2
PEND OREILLE RIVER								
Baree Mountain	13B1	6000	1	25N	31W	1937	L,5	1
Freezeout Summit	15C3	7000	21	15N	27W	1937	L	1
Hoodoo Creek	13C1	6200	9&16	1LN	27W	1937	L	1
BITTERROOT RIVER								
East Fork R. S.	13D1	5L00	1o	2N	17W	1937	L	1
Gibbons Pass	13D2	7100	L	2S	19W	1934	2,3,L,5	1
Mud Creek Pasture	1LC1	6500	2L	11N	2LW	1937	3	1
Nezperce Camp	1LD2	5580	19&20	1S	23W	1937	L	1
Nezperce Pass	1LD1	6575	32	28N	1oE	1937	L	1
Skalkaho Summit	13C3	7259	30	6N	17W	1937	L	1
Stuart Mountain #1	13C1	7L00	6	1LN	18W	1936	L	1
Saskatchewan River Basin								
ST. MARY RIVER								
Iceberg Lake	13A3	6000	L8°-50'		113°-L2'	1922	5	2,8
Piegan Pass # L	13AL	5000	L8°-L6'		113°-L0'	1922	5	2,8
Piegan Pass # 6	13Ao	6500	L8°-L5'		113°-L2'	1922	5	2,8
Mount Allen # 7	13A7	7000	L8°-LL'		113°-L0'	1922	5	2,8
Ptarmigan # 8	13A8	5800	L8°-50'		113°-L2'	1922	5	2,8

a. Numerals 1,2,3,L, and 5 refer to January 1, February 1, March 1, April 1, and May 1.

b. Numerals refer to Agency that secures the snow survey as follows:

1. U. S. Forest Service
2. U. S. Geological Survey and U. S. Engineer Corps
3. Montana Power Company
L. U. S. Indian Service
5. National Park Service
6. Montana Experiment Station
7. City of Bozeman
8. Dominion Water and Power Bureau
9. U. S. Fish and Wildlife Service
10. U. S. Bureau of Reclamation
11. Deerlodge Citizens Committee

Pd. Obs. Paid Observer by Soil Conservation Service

STORAGE IN RESERVOIRS OF MONTANA

MISSOURI RIVER BASIN — Reservoir Volume in 1,000's of Acre Feet

RESERVOIR	Location or on Diversion from	Usable Capacity	Contents This Year May 1 1950	Contents Last Year May 1 1949	May 1 10-Year Average 1939-48
Lake Sewall	Missouri	37.8	12.2	27.1	
Hauser Lake	Missouri	52.1	34.0	37.7	44.9
Ft. Peck Res.	Missouri	19,000.0	12,540.0	13,330.0	10,142.0
Ruby Res.	Ruby	38.5	----	----	
Hebgen Res.	Madison River	345.0	231.4	224.3	237.3
Madison Res.	Madison River	41.0	32.8	37.5	33.1
Smith River Res.	Smith River	10.7	----	----	
Gibson Res.	N.Fk.Sun River	105.0	32.5	56.1	72.5
Willow Creek	N.Fk.Sun-Willow Cr.	32.3	5.9	20.8	13.9
Pishkun Res.	N.Fk.Sun River	32.0	24.7	25.6	19.2
Lower Two Medicine L.	Two Medicine River	14.0	0	0	
Four Horns Res.	Badger Creek	20.0	6.3	10.9	8.8
Birch Creek Res.	Birch Creek	30.0	24.9	----	25.2
Lake Francis Res.	Birch Creek	112.0	91.4	----	83.3
Ackley Lake	Judith River	5.8	----	5.2	4.3
Durand Res.	N.Fk.Musselshell	7.0	----	5.8	
Dead Man Basin	Musselshell River	52.5	----	----	
Martinsdale Res.	So.Fk.Musselshell	23.1	----	13.2	13.5@
Fresno Res.	Milk River	127.2	60.9	67.5	73.3
Nelson Res.	Milk River	66.8	----	31.2	33.9
Glacier Lake	Rock Creek	4.2			
Mystic Lake	W.Rosebud Creek	20.8	0.6	2.7	3.4
Cooney Res.	Red Lodge Creek	27.5	18.9	11.8	14.1
Tongue Res.	Tongue River	73.9	15.6	8.3	16.3
Sherburne Lake Res.	Swiftcurrent Creek	66.1	35.4	----	
Lake Helena	Missouri River	10.4	2.7	3.9	
YELLOWSTONE RIVER BASIN (Wyoming)					
Buffalo Bill	Shoshone	456.6			267.6
Sunshine	Greybull	52.0			
Pilot Butte	Wind River	30.1	19.4	13.1	22.3
Bull Lake	Wind River	155.0	6.8	40.0	56.8
COLUMBIA RIVER BASIN					
Georgetown Lake	Flint Creek	31.0	19.0	22.1	22.5@
E.Fk.Rock Cr.Res.	E.Fk. Rock Cr.	16.0	----	----	
Nevada Creek Res.	Nevada Creek	12.6	----	10.8	
W.Fk. Bitterroot Res.	E.Fk. Bitterroot	31.7	----	15.0	13.5
Como Lake	Rock Creek	34.8	----	----	
Flathead Lake(Sommers)	Flathead River	1.791.0	826.9	1,017.0	616.4
Little Bitterroot	Little Bitterroot	37.1*	32.6*	36.1*	10.6*@
Dry Fork Res.	Dry Fork Creek	6.7*	6.0*	5.4*	2.5*@
Mission Valley Reservoirs	Mission Valley (Flathead River)	105.0**	35.4**	40.3**	43.4**@

* Comprise two reservoirs on Dry Dreek
* Comprise two reservoirs on Little Bitterroot River
** Comprise nine small reservoirs on Mission Valley Project Indian Reclamation Service
@ 5-Year average 1944-48

PRECIPITATION DATA FOR MAY 1, 1950

STATIONS	1949			1950			APRIL		Accum. Sum To Date	Dep. From Normal
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Precip.	Dep. From Normal		
	PRECIPITATION									
WEST OF DIVIDE										
Butte	0.62	0.53	0.34	0.66	0.29	1.70	0.81	-0.25	4.95	0.76
Deerlodge	0.21	0.27	0.31	0.67	0.07	0.80	0.73	-0.09	3.06	-0.13
Hamilton	1.20	2.03	0.71	2.23	0.84	0.54	0.65	-0.22	8.20	2.87
Kalispell	0.98	1.42	0.97	1.94	0.82	1.66	0.77	-0.03	8.56	0.24
Missoula	0.74	0.72	0.65	1.75	0.50	0.58	0.71	-0.19	5.65	-0.36
Trout Creek	2.89	5.28	6.60	8.71	5.20	4.71	1.86	0.18	35.25	13.80
Thompson Falls	2.05	2.95	3.51	4.71	2.25	2.76	1.67	0.23	19.90	6.89
Average	1.24	1.89	1.89	2.95	1.42	2.03	1.03	-0.05	12.22	3.37
CENTRAL DIVISION										
Babb	1.61	0.57	1.64	1.48	0.14	0.95	----	----		
Dillon (Normal)	1.19	0.13	0.18	0.17	0.05	1.16	0.62	-1.06	3.50	-3.37
Fort Benton	1.86	0.23	1.28	0.62	T	2.15	1.10	-0.02	7.24	2.53
Great Falls	.90	0.05	0.53	0.91	0.01	2.14	1.47	0.32	6.01	0.63
Havre	1.41	0.03	0.86	0.92	0.24	1.51	0.61	-0.38	5.58	0.96
Helena WBO	0.28	0.15	0.37	1.05	0.14	0.82	1.25	0.13	4.06	-0.33
Livingston	1.40	0.51	0.53	1.20	0.23	1.52	1.50	0.18	6.89	3.21
Lewistown Arpt.	1.82	0.18	1.78	0.74	0.09	1.37	----	----		
Mystic Lake	2.32	0.04	1.41	2.81	0.78	1.63	----	----		
Summit(Marias)	3.06	5.13	8.73	9.35	3.55	4.94	3.12	0.84	36.59	16.77
Yellowstone Park Wy.	1.89	9.81	1.03	2.32	0.65	1.60	----	----		
Average	1.61	0.71	1.67	2.08	0.64	2.04	1.38	-0.13	10.51	2.80
EASTERN DIVISION										
Billings #2	2.21	0.02	0.72	0.69	0.31	0.80	0.84	-0.47	5.59	-0.15
Circle	1.15	0.06	0.39	0.39	0.23	0.43	0.74	-0.40	4.39	-1.20
Fraser	0.90	0.05	0.50	1.19	0.56	1.05	1.15	0.19	5.40	1.19
Malta	1.25	0	0.62	0.90	0.25	0.74	0.41	-0.39	4.17	0.39
Mildred	1.69	T	0.51	0.19	0.33	0.71	2.55	1.48	5.98	2.47
Medicine Lake	0.50	T	0.35	0.87	0.18	0.53	1.44	0.55	3.87	0.58
Miles City	2.43	0.02	0.20	0.22	0.62	1.83	----	----		
Fort Peck	0.67	T	1.04	0.83	0.51	0.60	----	----		
Average	1.35	0.02	0.54	0.66	0.34	0.71	1.19	0.15	4.73	0.37

MONTANA SNOW SURVEYS MAY 1, 1950

MISSOURI BASIN

DRAINAGE BASIN AND SNOW COURSE **	No.	Elev.	Date of Survey 1950	Snow Depth (In.) 1950	Water Content May 1 1950	Change Since Apr. 1 1950	Water Content (Inches) Past Records 1949	1948	Average Data May 1 Avg.	%Avg.	Years of Record	Ground Surface Condition
JEFFERSON RIVER (Rock-Beaverhead)												
* Kilgore	11E12	6200	4/28	16.0	6.4	- 7.1	----	----	----	----	1	
(Big Hole)												
* Moose Creek	13D16	6200	5/2	48.0	15.9	- 2.5	----	13.5	8.8	182	11	
(Wise River)												
* Elk Horn	13D15	8450	5/2	35.0	10.3g	0.4	5.5	8.8	6.0	172	8	GNF
MADISON RIVER												
Hebgen	11E5	6550	5/1	21.9	8.4g	- 5.6	1.2	7.4	2.8	300	16	GNF
West Yellowstone	11E7	6700	5/1	23.4	10.0g	- 4.2	4.4	4.5	3.6	278	16	GNF
21-Mile	11E6	7150	5/1	45.7	18.8g	- 2.2	12.6	12.6	10.8	174	16	GF
GALLATIN RIVER												
Devil's Slide	10D4	8100	4/29	79.5	24.5	4.3	20.3	30.5	21.3	115	16	GNF
Hood Meadow	10D3	6600	4/29	32.9	8.5	1.2	1.7	9.9	4.2	202	16	GNF
New World	10D1	6700	4/28	40.1	10.8	- 0.2	----	----	----	----	1	GNF
21-Mile	11E6	7150	5/1	45.7	18.8g	- 2.2	12.6	12.6	10.8	174	16	GF
MISSOURI RIVER MAIN STEM												
Chessman Reservoir	12C5	6200	5/4	35.0	7.8g	3.4	0.0	4.6	1.7	460	14	
Kings Hill	10C1	7950	4/30	60.0	19.6g	2.5	12.8	14.6	12.4	158	8	GNF
Pipestone Pass	12D1	7200	4/28	22.1	3.2	- 1.0	1.0	----	1.5	213	11	GF
Stemple Pass	12C1	6900	5/5	46.6	14.2g	2.6	6.3	8.3	6.4	222	17	
Tenmile, Lower	12C2	6250	5/1	38.0	8.9g	1.3	0.2	2.1	2.0	225	16	GNF;M
Tenmile, Middle	12C3	6800	5/2	61.3	16.3g	3.5	3.5	8.9	6.5	250	16	GNF;M
Tenmile, Upper	12C4	8000	5/1	61.8	18.8g	3.0	7.1	14.6	9.6	197	16	GNF;M
(Teton River)				NO MEASUREMENTS SCHEDULED FOR MAY 1								

* Adjacent Basin
g Greatest Water Content for Period of Record
GF Ground Frozen
GNF Ground Not Frozen
W Water
M Moist Dirt

MONTANA SNOW SURVEYS MAY 1, 1950

MISSOURI BASIN

DRAINAGE BASIN AND SNOW COURSE **	No.	Elev.	Date of Survey 1950	Snow Depth (In.) 1950	Water Content May 1 1950	Change Since Apr. 1 1950	Water Content (Inches) Past Records 1949	1948	Average Data May 1 Avg.	%Avg.	Years of Record	Ground Surface Condition
(Sun River)				NO MEASUREMENTS SCHEDULED FOR MAY 1								
(Marias River)												
Marias Pass	12B5	5250	5/1	63.1	26.3g	= 2.4	12.1	20.6	9.6	274	16	GNF; M
Snow Lab. #16	13A9	5200	4/30	80.3	28.0g	= 0.2	17.0	17.9	20.4	137	4	GNF
(Milk River)				NO MEASUREMENTS SCHEDULED FOR MAY 1								
St. MARY RIVER												
Iceberg Lake #3	13A3	6000	5/5	89.5	39.9g	----	21.7	25.7	20.7	194	28	
Piegan Pass #4	13A4	5000	5/4	62.3	27.6	----	10.7	17.9	13.8	200	28	
Piegan Pass #6	13A6	6500	5/6	130.9	57.8g	----	31.1	33.0	29.5	197	28	
Mount Allen #7	13A7	7000	5/6	139.1	62.8g	----	39.8	45.8	37.0	170	28	
Ptarmigan #8	13A8	5800	5/5	122.3	52.5g	----	34.1	31.5	23.1	226	14	

COLUMBIA RIVER BASIN (Stations received too late to classify)

FLATHEAD RIVER												
Logan Creek	14A5	4300	5/2	21.2	7.1	-3.4	---	----	1.8	390	8	GNF
Brush Cr. Summit	14A4	5000	5/3	47.3	17.1	-1.1	---	----	5.9	290	7	GF
Spotted Bear Mt.	13B2	7000	5/3	44.3	18.1	-1.3	---	----	----	----	1	
Trout Creek Lake	13B1	3600	5/5	46.9	20.2	-17.2	---	----	----	----	1	

* Adjacent Basin
g Greatest Water Content for Period of Record
GF Ground Frozen
GNF Ground Not Frozen
W Water
M Moist Dirt

MONTANA SNOW SURVEYS MAY 1, 1950

MISSOURI BASIN

DRAINAGE BASIN AND SNOW COURSE **	No.	Elev.	Date of Survey 1950	Snow Depth (In.) 1950	Water Content May 1 1950	Change Since Apr. 1 1950	Water Content (Inches) Past Records 1949	1948	Average Data May 1 Avg.	%Ave.	Years of Record	Ground Surface Condition
UPPER YELLOWSTONE												
Canyon	10E3	7750	4/30	49.4	17.3g	- 1.2	9.7	10.8	11.2	155	5	
Cooke City	10D7	7400	4/30	22.1	6.1	- 2.3	3.6	6.5g	4.9	125	6	GF
Lake Camp	10E4	7850	4/30	34.2	11.9g	- 1.7	7.6	----	8.4	142	4	
Lupine	10E1	7300	5/1	27.4	10.2g	- 1.5	----	----	4.5	226	4	
(Shields River)			NO MEASUREMENT SCHEDULED FOR MAY 1									
(Musselshell River)			NO MEASUREMENT SCHEDULED FOR MAY 1									
LOWER YELLOWSTONE												
(Wind River)												
Brooks Lake #3	10F2	9200	4/26	82.8	33.4g	1.6	22.4	25.7	22.2	150	15	GNF
Burroughs Creek	9F6	8800	4/26	50.6	17.7	- 2.1	11.2	----	----	----	2	GNF
Dinwoodie	9F10	10000	4/25	53.7	17.5	- 1.1	0.0	----	----	----	2	GNF
Dry Creek	9F9	9500	4/25	33.9	10.6	0.1	3.9	----	----	----	2	GNF
Du Noir	9F2	8750	4/27	30.9	11.2	- 2.2	1.6	6.4	6.4	175	10	GNF
Geyser Creek	9F3	8500	4/26	25.7	7.8	- 3.5	0.0	----	----	----	2	GNF
Hobbs Park	9G2	10000	4/29	77.9	30.3	2.6	21.3	----	----	----	2	GNF
Little Warm	9F4	9500	4/26	62.3	22.1	0.0	13.8	----	----	----	2	GNF
Mosquito Park	9G3	9500	4/29	43.6	14.2gg	- 0.1	7.8	7.7	8.4	169	6	GNF
Sheridan	9F1	7500	4/26	8.6	3.4gg	- 4.3	0.0	2.3	1.4	236	10	GF
St. Lawrence	9F11	9000	5/2	30.1	9.9	- 0.6	5.2	5.7	8.0	123	7	GNF
T-Cross Ranch	9F5	8000	4/27	16.9	5.5	- 2.2	0.0	2.1	2.6	202	9	GNF
Trout Creek	9G1	8400	4/29	11.1	1.5	- 5.6	0.0	----	----	----	2	GNF
(Popo Agie River)												
Blue Ridge	8G2	9500	5/1	50.8	19.8gg	0.7	11.5	13.4	12.2	164	11	GNF
Grannier Meadows	8G4	9000	5/1	55.8	23.3gg	- 1.0	13.0	13.4	12.8	182	14	GNF
Larsen Creek	9G4	9000	5/5	59.2	22.6	-13.5	8.3	----	----	----	2	GNF
Sawmill Glade	8G1	8500	5/1	12.3	4.1	- 2.1	1.0	6.3	5.5	75	11	GNF
South Pass	8G3	9000	5/1	58.1	23.8gg	0.1	13.0	14.2	13.4	177	11	GNF

* Adjacent Basin
g Greatest Water Content for Period of Record
GF Ground Frozen
GNF Ground Not Frozen
W Water
M Moist Dirt

MONTANA SNOW SURVEYS MAY 1, 1950

MISSOURI BASIN

DRAINAGE BASIN AND SNOW COURSE **	No.	Elev.	Date of Survey 1950	Snow Depth (In.) 1950	Water Content May 1 1950	Change Since Apr. 1 1950	Water Content (Inches) Past Records 1949	Past Records 1948	Average Data May 1 Avg.	Average Data May 1 %Avg.	Years of Record	Ground Surface Condition
BIG HORN RIVER (Wyoming)												
Beavers Mill	9F8	8000	5/2	29.9	8.0	- 0.9	4.8	----	----	----	2	GNF
Owl Creek	8F1	8700	5/5	36.1	10.0	3.8	5.6	----	----	----	2	
Tensleep R.S.	7E3	8300	5/1	21.7	8.5g	0.1	1.5	5.5	4.3	197	15	Ice
Timber Creek	9E2	9000	5/2	24.8	6.7	2.0	4.8	----	----	----	2	GNF
Ranger Creek	7E1	8800	5/1	26.6	8.4	- 0.6	6.7	6.0	6.5	129	14	Ice;GF
Wood River	9E7	8000	5/1	16.9	5.0	0.0	2.3	5.8	3.7	135	10	GNF
SHOSHONE RIVER												
East Entrance	10E6	7000	4/29	13.3	5.6	- 5.8	----	----	----	----	1	Ice;GF
Sylvan Pass	10E5	7100	4/29	39.9	15.7g	- 2.9	11.5	14.1	8.9	177	14	GNF
TONGUE RIVER												
Burgess Junction	7E4	7900	4/20	38.3	16.0	4.0	----	----	----	----	1	GNF
Big Goose	7E2	7700	4/20	6.1	1.7	- 0.8	0.0	3.9	3.0	57	14	GF
Dome Lake	7E5	8800	4/20	29.1	8.9	3.0	----	----	----	----	2	GNF
POWDER RIVER												
Muddy Pass	7E7	9700	4/18	34.3	9.5	1.1	----	----	----	----	1	GNF
Sour Dough	6E1	8500	4/19	21.5	6.0	0.9	0.0	6.3	5.2	115	14	GNF
Soldier Park	7E6	8700	4/17	19.7	6.2	1.2	----	----	----	----	1	GF
COLUMBIA RIVER												
KOOTENAI												
Baree Mountain	15B1	6000	5/2	139.8	63.9g	2.6	51.1	47.2	39.6	161	14	GNF
Blue Bird Basin	14A1	6800	5/1	131.2	53.7g	7.5	36.7	51.5	35.5	151	12	GNF
Fernie	Canada	3500	5/1	18.6	7.1g	- 7.8	0.0	3.9	2.8	254	4	
Ferguson	Canada	2900	4/30	41.9	18.9g	- 4.0	11.7	18.5	15.8	120	4	
Gray Creek	Canada	5100	4/29	70.7	24.5g	0.5	18.4	20.0	21.0	175	3	
Marble Canyon	Canada	5000	4/28	51.2	16.6g	0.9	10.2	12.1	13.0	128	3	
Red Mountain Mont.	15A1	6000	5/1	73.0	31.1g	0.7	39.7	16.3	15.2	204	13	GF
Sandon	Canada	3500	4/30	19.9	8.3g	- 6.2	0.0	4.2	3.1	268	4	
Sinclair Pass	Canada	4500	5/1	68.0	32.0g	26.1	0.2	0.8	8.1	395	4	
Sullivan Mine	Canada	5100	4/30	49.0	16.6g	- 4.5	7.9	9.9	11.5	144	3	
Upper Elk River	Canada	4400	5/1	8.2	3.4	- 7.2	0.0	5.5g	3.0	113	3	

MONTANA SNOW SURVEYS MAY 1, 1950

MISSOURI BASIN

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FLATHEAD RIVER												
Big Creek	13B3	6750	4/27	141.5	60.0	6.2	----	----	----	----	1	
Desert Mountain	13A2	5600	5/1	51.6	21.7g	- 1.6	10.8	14.9	9.9	220	14	
Hell Roaring Divide	14A3	5700	5/1	91.4	37.4g	- 0.2	26.7	31.0	27.1	138	9	
Marias Pass	13A5	5250	5/1	63.1	26.3g	- 2.4	12.1	20.6	9.6	274	16	
North Fork Jocko	13B7	6330	4/30	129.4	59.6g	3.3	----	----	33.2	180	3	GF
Rainy Lake	13B6	4300	5/2	16.9	10.2g	- 8.7	T	0.0	----	----	4	W
Snow Lab. #16	13A9	5200	4/30	80.3	28.0g	- 0.2	17.0	17.9	20.4	137	4	
Strawberry Lake	13B10	6500	5/1	131.8	58.8g	- 0.3	35.4	----	----	----	2	
Trinkus Lake	13B1	6500	5/3	116.3	53.1g	- 4.2	36.5	----	----	----	2	
Trout Lake	13B11	3600	5/5	46.7	20.2	-17.2	----	----	----	----	1	
UPPER CLARK FORK												
Chessman Res.	12C5	6200	5/4	35.0	7.8g	3.4	0.0	4.6	1.7	460	14	
East Fork R.S.	13D1	5400	4/28	T	T g	- 7.6	0.0	0.0	----	----	14	Patches
El Dorado Mine	13C9	7800	5/8	110.1	37.2	9.5	---	---	----	----	1	
Gold Creek Lake	13C8	7200	5/8	86.2	29.0	8.6	----	---	----	----	1	
North Fork Jocko	13B7	6330	4/30	129.4	59.6g	3.3	----	----	33.2	180	3	GF
Pipestone Pass	12D1	7200	4/28	22.1	3.2	- 1.0	1.0	----	1.5	213	11	
Rainy Lake	13B6	4200	5/2	16.9	10.2g	- 8.7	T	0.0	----	----	4	W; GNF
Skalkaho Summit	13C3	7258	5/2	86.6	33.5g	9.5	24.8	26.7	22.9	146	14	W; GNF
Stemple Pass	13C1	6900	5/5	46.6	14.2g	2.6	6.3	8.3	6.4	222	17	
Storm Lake	12C7	7780	5/2	72.4	18.9	2.2	12.7	21.2g	14.2	132	12	GF

* Adjacent Basin
g Greatest Water Content for Period of Record
GF Ground Frozen
GNF Ground Not Frozen
W Water
M Moist Dirt

MONTANA SNOW SURVEYS MAY 1, 1950

MISSOURI BASIN

DRAINAGE BASIN AND SNOW COURSE **	No.	Elev.	Date of Survey 1950	Snow Depth (In.) 1950	Water Content May 1 1950	Change Since Apr. 1 1950	Water Content (Inches) Past Records 1949	1948	Average Data May 1 Avg.	%Avg.	Years of Record	Ground Surface Condition
UPPER CLARK FORK (Continued)												
Tenmile, Lower	12C2	6250	5/1	38.0	8.9g	1.3	0.2	2.1	2.0	225	16	GNF;M
Tenmile, Middle	12C3	6800	5/2	61.3	16.3g	3.5	3.5	8.9	6.5	250	16	GNF;M
Tenmile, Upper	12C4	8000	5/1	61.8	18.8g	3.0	7.1	14.6	9.6	197	16	GNF;M
Lookout	15B2	5250	5/1	104.0	45.1	- 3.6	36.6	34.8	33.8	134	6	
PEND OREILLE												
Baree Mountain	13B1	6000	5/2	139.8	63.9g	2.6	51.1	47.2	39.6	161	14	GNF
Mosquito Ridge	16A4	5600	5/1	102.0	47.0g	- 0.6	34.1	34.6	28.1	168	12	
BITTERROOT												
East Fork R.S.	13D1	5400	4/28	T	T	- 7.6	0.0	0.0	----	----	14	Patches
Gibbons Pass	13D2	7100	4/28	73.7	28.3	- 1.7	22.9	22.1	19.3	147	15	GNF
Mud Creek Pasture	14C1	4500	5/2	0.0	0.0	- 8.2	0	0	----	----	13	
Nezperce Camp	14D2	5580	5/1	33.2	13.1g	- 2.9	6.0	7.8	4.4	300	14	GNF;W
Nezperce Pass	14D1	6575	5/1	47.2	18.6g	- 1.4	12.9	15.1	9.3	200	14	GNF
Skalkaho Summit	13C3	7258	5/2	86.6	33.5g	9.5	24.8	26.7	22.9	146	14	GNF;W
Moose Creek	13D16	6200	5/2	48.0	15.9	- 2.5	----	13.5	8.8	182	11	
Kit Carson	14D3	4700	5/2	7.1	2.2	- 6.7	----	----	0.4	----	9	GNF;W
Packers Meadow	14C2	5700	5/2	59.3	24.3	- 7.0	24.6g	21.9	13.5	180	14	

* Adjacent Basin
g Greatest Water Content for Period of Record
GF Ground Frozen
GNF Ground Not Frozen
W Water
M Moist Dirt

Federal - State - Private

COOPERATIVE SNOW SURVEYS

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Furnishes the basic data
necessary for forecasting
water supply for irrigation,
domestic and municipal water
supply, hydro-electric power
generation; navigation,
mining and industry

"WATER IS THE WEST'S GREATEST RESOURCE"